Ziff: Conventional Natural Gas Supplies Not Enough to Meet Growing North American Demand

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HOUSTON, Apr. 16 -- Conventional natural gas supplies will not be enough to meet the North American market's demand for gas over the next decade. In the coming years, demand will have to be met through all industry players working together to expand North America's gas network as well as exploring for gas in various frontier areas of the U.S. and Canada.

This was the consensus among panelists representing U.S. and Canadian pipelines and producers at the opening of the 2-day North American Gas Strategies Conference hosted by Ziff Energy Group Monday in Houston.

The last few years were good ones for replacing gas production in the U.S., said Paul Ziff, Ziff Energy CEO. In 2000, 106% of gas production was replaced thorough the drillbit by the top 30 U.S. producers, Ziff said. "Last year, revisions were slightly negative at 6%, which brought total replacement for the top 30 companies down to an equal 100%, or full replacement," Ziff said.

Natural gas drilling activity in the Gulf of Mexico doubled during 1995-2001 and has come off strongly during the first part of this year, Ziff added. Meanwhile, although onshore gas drilling levels in the Lower 48 have grown by 130% over the last 7 years, it has fallen off sharply during the first part of 2002, Ziff noted.

Natural gas consumption

Natural gas consumption in the U.S. and Canada will grow to 28.5 tcf by 2010, slightly less that a 2% compounded growth average, said Doug Whisenaut, president, Williams Gas Pipelines Group. "Over half of this increase in gas consumption is for power generation peaks, which is expected to grow 5%/year over the same period. While power generation itself?is expected to grow by slightly less than 2%/year over the decade, almost two thirds of that growth is expected to be gas-fired," he said.

As a result, Whisenaut noted, gas-fired power generation will represent 21% of total generation in the U.S. "Since the growth of U.S. gas-fired generation capacity is to serve summer cooling demand, we forecast a smaller growth in the annual gas consumption for power generation. Clearly pipelines need to be able to handle the demand sweeps of power generation."

The greatest rate of growth in gas consumption will be in New England (5.2%/year), the Southeast (3.2%/year), and Rocky Mountain states (2.8%/year), Whisenaut predicted.
Hal Kvisle, president and CEO, TransCanada PipeLines Ltd., said he expects gas demand in the U.S. and Canada to grow from 25.4 tcf/year in 2000 to 32.6 tcf/year in 2010. Of this demand increase, 45% is related to power generation, Kvisle said.

"Is there going to be a 30 tcf market a decade from now?" asked Stehpen Wuori, group vice-president, planning and deveopment, Enbridge Inc. "The answer is: I don't know," but the growth

will be robust, he said. "Supply is not the issue, getting the supply to market is," Wuori noted, adding that getting to a 30 tcf market will require $120 billion and participation in all aspects of gas delivery from all players.

Natural gas supply

Significant increases in production will be required to meet growing gas demand in the U.S. and Canada, most panelists concurred.

These supplies will come primarily from Western Canada and the Arctic (increasing at a rate of 13%/year, or 6.2 bcfd), the deepwater Gulf of Mexico (10%/year, or 4.2 bcfd), and the Rocky Mountains (4%/year, or 2.4 bcfd), as well from LNG imports, which are projected to reach 3 bcfd, Whisenaut said.

Kvisle said, "Our optimistic supply outlook is the one that was our base supply outlook about 18 months ago." He concedes gas supplies from Western Canada will reach 19.5 bcfd in 2010 vs. 16.5 bcfd in 2000. Also, supplies from the U.S. Rockies are expected to climb to 6.9 bcfd in 2010 from 3.9 bcfd in 2000 and gas production from the Gulf Coast to grow to 34.5 bcfd over the decade from 26.9 bcfd in 2000. "These are very good numbers, particularly in the face of steep decline in all of these areas," Kvisle added.

A decade ago, North American gas was supplied from within the continent's borders, but over the next 10 years, there will be a globalization of North American gas supplies, said Jay Holm, Eastern Pipeline Group, El Paso Corp. "That overall increase is going to have to be supported by total change in our supply orientation. We are moving from 10 years ago, a Lower 48 production scenario, to today, where we have a North American scenario, to 2011, where we are going to have truly a global scenario for our overall supply bases," Holm said.

"When you look at 2001, we're projecting that [gas production from] Nova Scotia is going to jump dramatically from 400 MMcfd up to the 2 bcfd level, changing significantly the flow dynamics in the Northeast and New England areas," Holm said. "We also see a very aggressive LNG increase from 600 MMcfd to 5 bcfd in the next 10 years through the reactivated and new plants being built and placed on stream," he added.

At least one panelist, meanwhile, felt that gas supplies could better meet increasing demand through the expansion of existing and construction of new storage facilities. "With the amount of load that [industry is] bringing on in terms of electric generation as well as the growth in the [local distribution company] market, we've got to bring new storage resources on," said Thomas O'Connor, senior vice-president, marketing and capacity management, Duke Energy Gas Transmission, a unit of Duke Energy Corp., Charlotte, NC.

Duke Energy is currently in the midst of expanding its Moss Bluff, Tex., and Egan, La., storage facilities. Each will be expanded to 16 bcf storage capacity from their current 12 bcf.
Some panelists said that the supply-demand challenge would be best addressed using pooled resources. "There is going to have to be a lot of U.S.-Canadian cooperation in developing the [supply] basins," Wuori noted.

Gas production from the Western Canadian Sedimentary Basin (WCSB), for instance, will depend largely on how the gas is distributed thorough the basin and at what price, or at what netback, it is to become economical, said David J. Boone, executive vice-president and COO, PanCanadian Energy Corp., soon to be EnCana Corp. (OGJ, Feb. 4, 2002, p. 35).

Looking at WCSB gas completions vs. production over the last 3 years, each year records have been established for gas completions, Boone said. Despite nearly a 30% jump in completions during 1999-2000, however, production rose only about 1%, he noted. And in 2000-01, the number of completions were up another 20%, with production increasing by just 3%, he said.

"Clearly, our industry has shown a preference for shallow gas that gets brought on quickly and with minimal risk," Boone said. For 3 years, the average completion depth has held steady at under 3,200 ft and in 2001, three fourths of all gas completions were 3,750 ft deep or shallower, while less than 2% reached below 10,000 ft, Boone concluded.

Infrastructure development

One of the biggest challenges facing the pipeline industry, specifically, Wuori said, is infrastructure development policies in US and Canadian frontier areas.

"All over North America—particularly onshore—there are issues whenever new construction is contemplated," he said. "There is growing North American demand and supply from the frontiers, but the connection of those becomes the big challenge, because there is always someone who has an issue.

The issues of NIMBY, or "Not in my backyard,"—or the less-familiar BANANA, or "Build absolutely nothing anywhere near anyone,"—remain the mantras for those taking issue with new construction, Wuori said.

"Innovation is going to be important for getting frontier gas to market," he concluded.

Northern gas

The panelists agreed that, within the decade, in some way or another, natural gas supplies would be transported from northern producing areas to southern markets.

TransCanada, for one, supports a two-pipeline model for transporting gas from Alaska and from the Mackenzie Delta, Kvisle explained. TransCanada is active, along with its partners, in offering pipeline solutions for both northern basins, and it can accommodate all arctic volumes into its Alberta system, Kvisle said. "Producers will decide on the timing," he added.

The responsibility of funding and building such pipelines, however, remains open to debate.

Construction of the line should depend on the markets being served, Whisenaut said. "It all boils down to who's motivated to do so. Power generators and LDCs are an important part of it. In Alaska, we think the construction will be producer-driven," he said.

"With respect to Alaska and the Mackenzie Delta in Canada," Kvisle said, "I agree that it will be the producers that will drive the project going ahead, but I think that we need to look at these pipeline projects in two ways: the first 10 years, when producers may carry the bulk of the financial burden, and the latter years, when the pipeline companies will have to share some of that risk."

Holm said, "I'm certainly a believer that we have to redefine the risk profile and reward profile for all the players, being the producers, the pipelines, and the customers or the market. Who shares in that risk and how is going to depend on the particular situation at hand.

"For very capital-intensive projects—those over $2 billion—I don't think that we're close yet to resolving that issue, particularly on the market side. Is the market going to wait until it's too late to belly up to the bar?" Holm added.

"The LDCs are coming back into the market, and the unbundling issue has settled down at the retail level," O'Conner said. "There's going to have to be an alignment between the market and the pipelines. We have to be willing to share at the upside, if you're going to assume the risk," he concluded.

Collectively, the panel agreed that a New York Mercantile Exchange natural gas price of about $3.50/Mcf would be required to consider such projects economically feasible.